MITSUBISHI ELECTRIC
Changes for the Better

for a greener tomorrow eco Changes

Introduction of MSZ-FH

Introduction

- The success of the MSZ series started in year 2000 with the MSZ-RV, this had a twin rotary compressor and was much appreciated by installers due its silence, this was sold in about 3 000 units.
- In 2002 we launched our first Nordic version units with built in base heater from factory and operation down to -20oC, the name was Nordic star MSZ-YV-VAH. This was sold in 10 000 units in the Nordic region.
- In 2004 we came out with a new unit MSZ-FA-VAH series. This was sold in 25 000 units in the Nordic region. It was with this unit Mitsubishi Electric became one of the largest suppliers in the market of air / air heat pumps.
- In 2007 it was time to launch the successor who became an extreme huge success in Scandinavia, MSZ-FD-VAH. This model, was sold in more than 28 000 units.
- In 2008, an updated version came of the MSZ-FD, VABH who managed outdoor temperatures down to -25oC and had Hyper Heating function (high heating during cold weather). This model have been sold in more than 215 000 units.
- August 2012, Mitsubishi Electric launching MSZ-FH, the new flagship. It have even better performance with lots of new features.
- Thanks to Mitsubishi Electric's innovative capacity and high quality, we look forward to a great trip even with this new FH model.
- In addition, we would also like to add that we have launched over various air / air heat pumps in the "mid range" as MSZ-GA, GB, GE, EF with a great success.
- In total we have sold over 400,000 air / air heat pumps to the consumer market in Scandinavia.

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Wallmounted heat pumps

	2011	2012
High end	MSZ-FD25/35/50VABH	New! MSZ-FH25/35VEHZ
Design range	MSZ-EF25/35VAH	MSZ-EF25/35VAH
Mid range	MSZ-GE25/35/50VAH	MSZ-GE25/35/50VAH
Low End	_	

MSZ-FH50VEHZ launched in 2013

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[Line up]

Size	Model name		
	Set	Indoor unit	Outdoor unit
25	MSZ-FH25VEHZ	MSZ-FH25VE	MUZ-FH25VEHZ
35	MSZ-FH35VEHZ	MSZ-FH35VE	MUZ-FH35VEHZ

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[Key features]

- ✓ Energy rank
  - ✓ ClasA++ in heating
  - ✓ Clas A+++ in cooling
- ✓ COP
  - ✓ 5.52
- ✓ SCOP
  - ✓ 4,9
- ✓ Maintenance heat for second home/garage
  - ✓ +10oC function
- ✓ Weekly timer
  - ✓ Lower temperature when you are at work
- ✓ Fan Modes
  - ✓ Get better heat distribution in the house if you are using a wood stove.
- ✓ 3 D I see sensor
  - ✓ Detects people in the room and can effectively control the heat / cold.

- ✓ Hyper heating
  - ✓ High heating capacity at low ambient temperature.
- ✓ Plasma Quad
  - ✓ Improved filter function, now also anti virus and bacteria, as well as dust, pollen and odors.
- ✓ Double flap
  - ✓ distribute the heat / cold better at such two storey house
- ✓ Operation down to -25oC
  - ✓ Guaranteed operating down to -25oC
- ✓ Quiet inddor unit
  - ✓ Only 20dB(A)
- ✓ Power ful mode
  - ✓ Quick heating/cooling

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[Design]

Clean design that blends into the most environments, but is perceived as stylish and modern in its design language

Color: Pure White

Indoor Unit

Pure White

Outdoor Unit

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[Dimensions]

Length 925 mm
Depth234 mm
Height 305 (17) mm

Length 800 mm
Depth 285 mm
Height 550 mm

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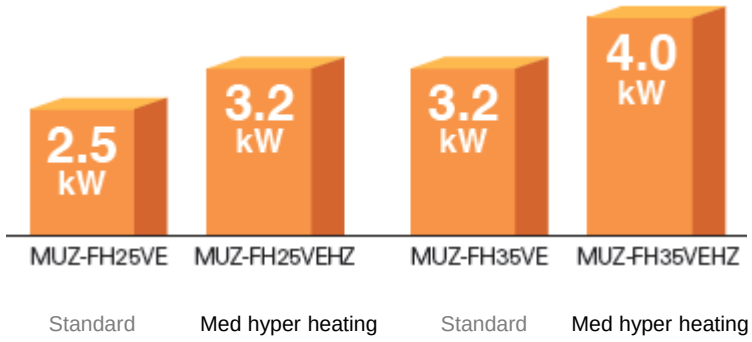
[Nordic custom unit]

- The Nordic custom units differ from the standard units.



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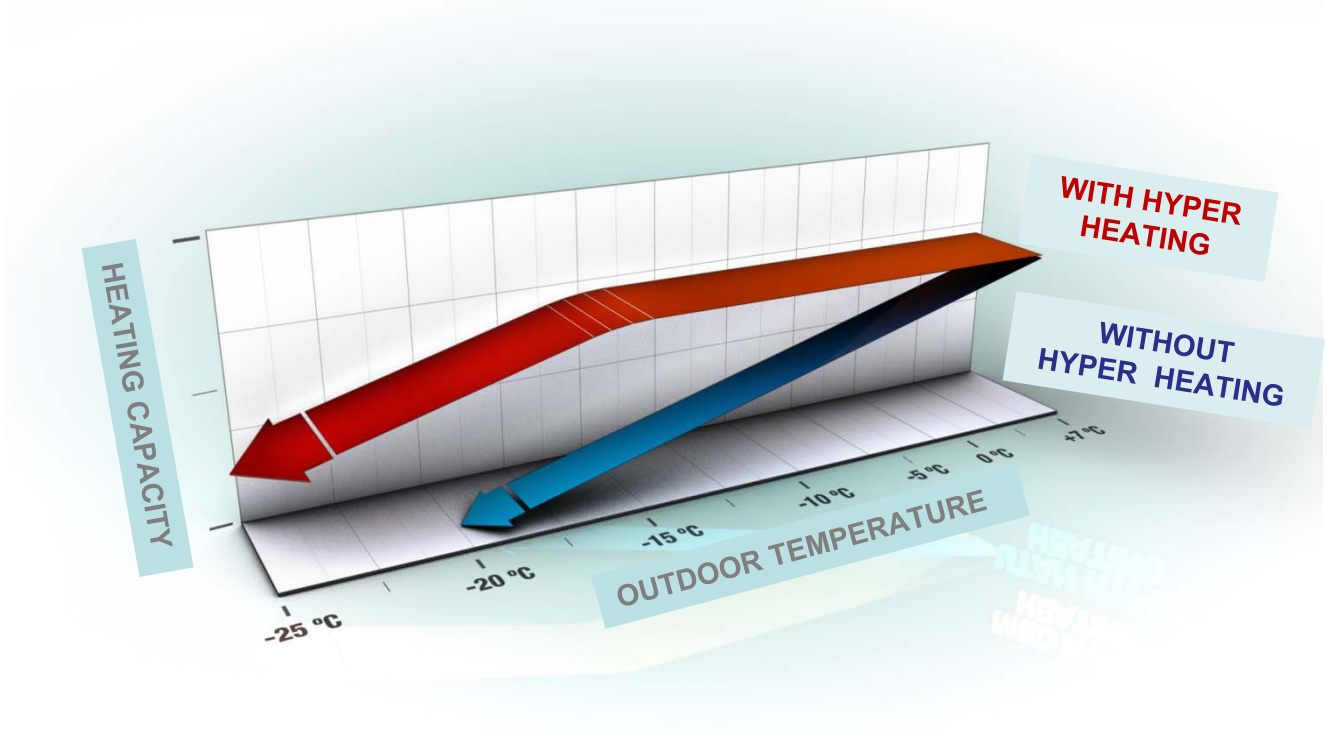
[Hyper Heating]

HYPER HEATING

With hyper heating, FH supplies very high heating capacity when it's cold outside.



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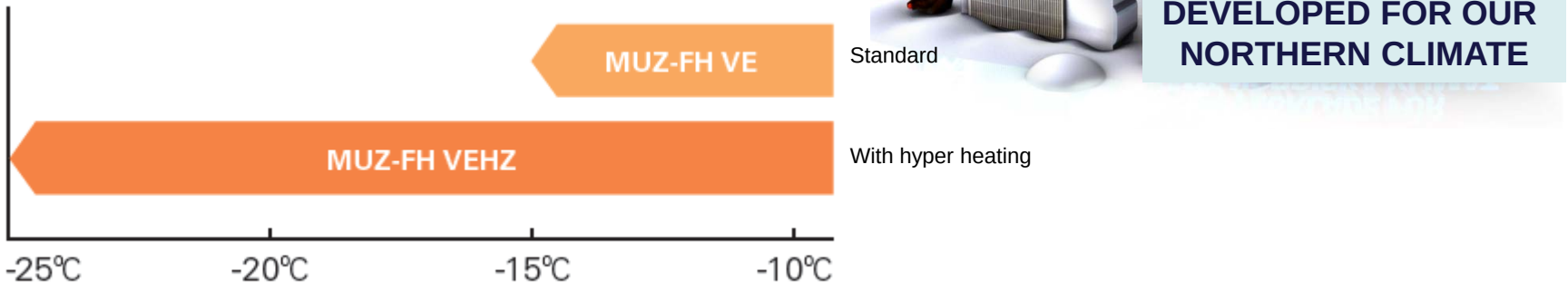
The outdoor unit is designed to withstand our cold Nordic winters.

- Hyper heating (high heating capacity at low ambient temperature).
- Base heater from factory.
- Customized drip tray so that water more easily drain.



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MSZ-FH-VEHZ is designed to withstand outdoor temperatures down to-25oC.

HEAT DURING THE COLDEST

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[Made for Nordic Climate]

Auto Restart

The outdoor unit is designed to withstand our cold Nordic winters

- **Hyper Heating** (High heating capacity at low ambient temperature)
- Base heater from factory.
- Customized drip tray so that water more easily drain.
- Auto restart after power failure

DEVELOPED FOR OUR NORTHERN CLIMATE

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[COOLING with energyrank A+++]

Econo Cool

You can also run MSZ-FH as airconditioners the hot summer months.

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[Double Vane]

DOUBLE VANE

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[Double Vane]

With double vane mode, you can obtain good dispersion of heat, even if the house has two floors.

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[Maintenance heat]

i-save mode

+10oC function for your holliday home.

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[Weekly timer]

- All FH indoor units are provided with weekly schedule and comes with a remote control as standard. The weekly schedule is set via the remote control.
- Reduce the heat when you are at work to save energy and heat up before you get home.

Example Operation Pattern (winter heating mode)

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
6:00	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C
8:00	OFF	OFF	OFF	OFF	OFF	ON 18°C	ON 18°C
10:00							
12:00	Automatically turned off during work hours					Midday is warmer, so the temperature is set lower	
14:00							
16:00							
18:00	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C
20:00	Automatically turns on, synchronized with arrival at home					Automatically raises temperature setting to match time when outside-air temperature is low	
22:00							
22:00~ (during sleeping hours)	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C
	Automatically lowers temperature at bedtime for energy-saving operation at night						

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[Power ful mode]

POWERFUL MODE

- With the push of a button on the remote control gives your FH full power for rapid heating or cooling.

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[Low noise]

Only 20dB
25

- Mitsubishi Electric is known as one of the silent heat pumps on the market.
- Even this model is silent as its predecessor

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[Auto restart]

- MSZ-FH is equipped with Auto Restart when such power failure.

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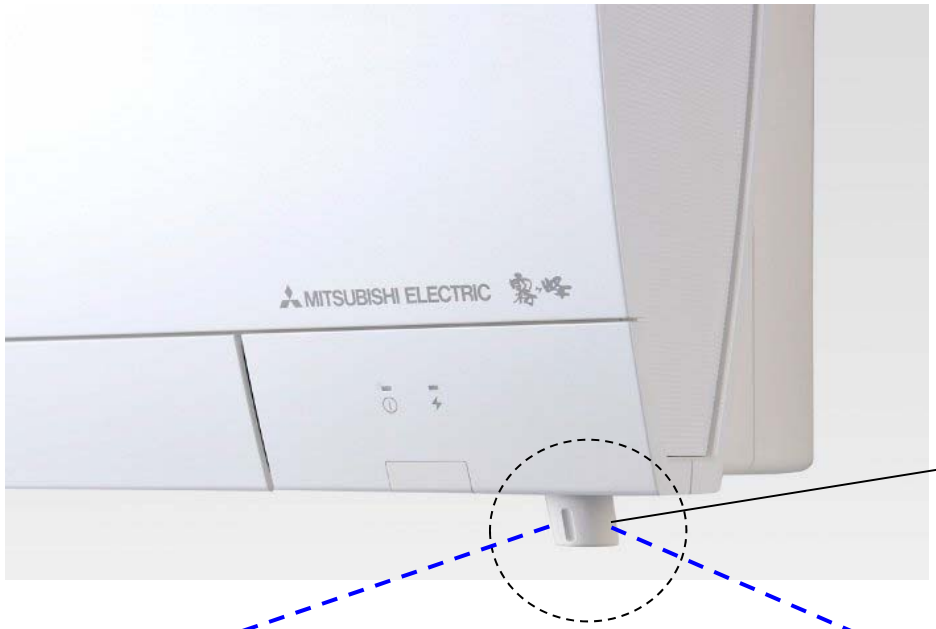
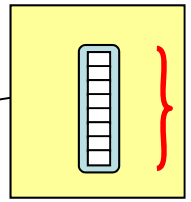
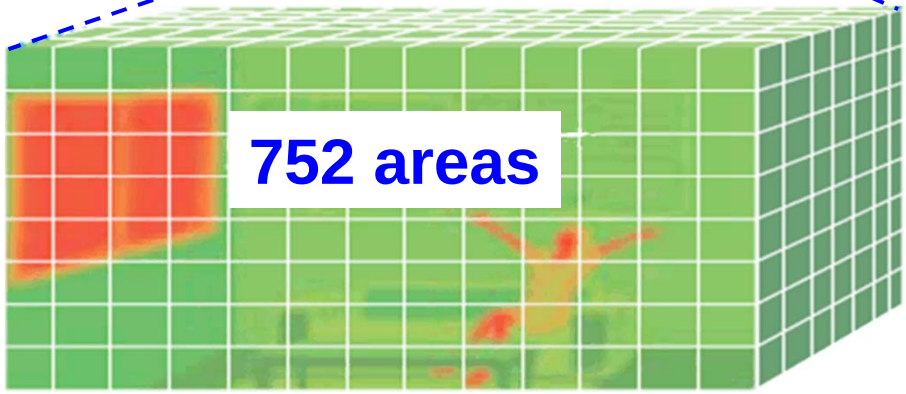


Human sensor
(Thermopile sensor) watches widely whole the room with **8 elements**.





Human sensor can detect **752 areas** in three dimensions.

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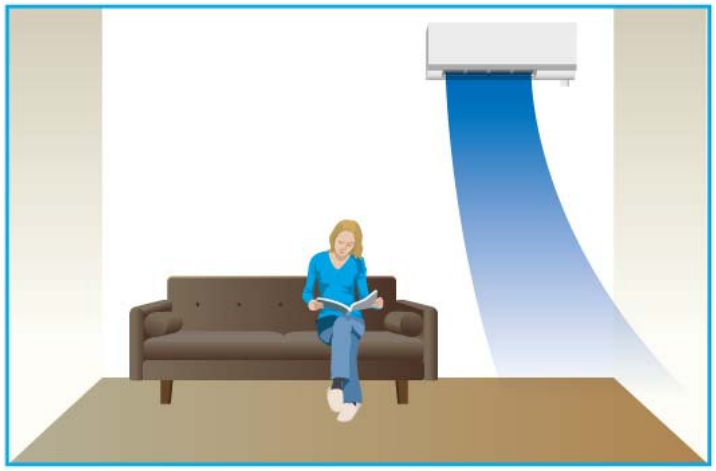
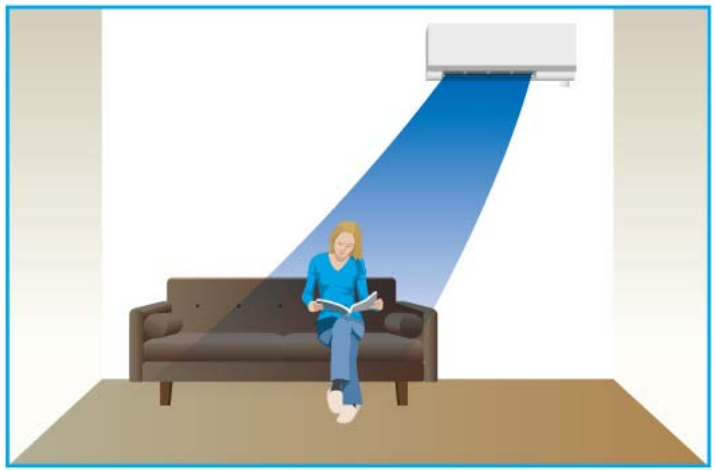
[Avoid drafts]

HUMAN

With human sensor, you can set the remote control directly or indirectly air distribution to people. With this function, you can avoid drafts or if they are frozen to get the heat on you.





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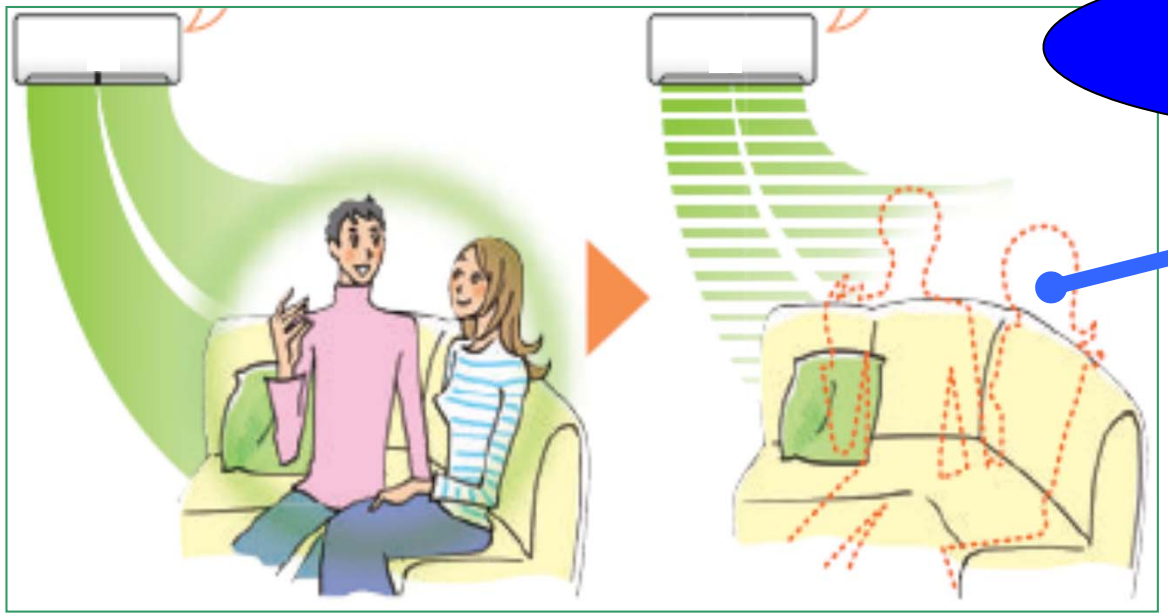
[Absence detection]

ABSENCE DETECTION

If you leave the room, the set temperature is increased in cooling or reduced in heating. When you come back to the room, the set temperature returns to the previous setting.



FUNCTION for ENERGY SAVING !

It is able to detect human absence by Human sensor.

→2 degC change makes 10% energy saving in heating.
Now under development of its control. Our control will be 2 set points! (1~2 degC change firstly. More difference if absent time is long… More energy saving!!!

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Natural flow

Natural Flow

Natural Flow:
(only in cooling/fan mode)

Designed air flow with the same wave of the actual natural breeze

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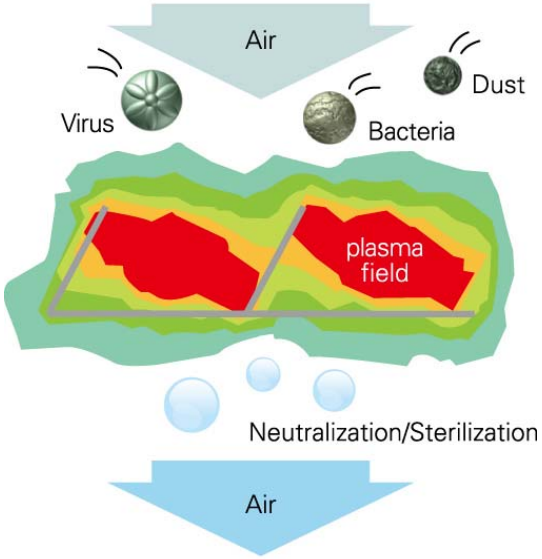
[Multi filter: Plasma Quad]

New FH is equiped with Plasma QUAD*= Virus, Allergen, dust and Bacteria.*



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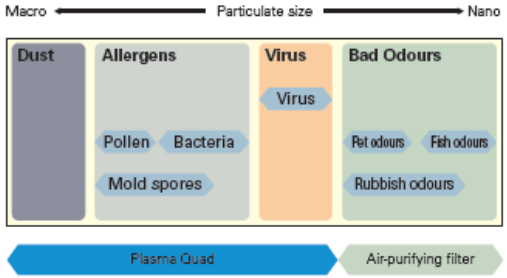
[Multi Filter]

[Effective Range]



Plasma Quad

Plasma Quad | Anti-Mold | Electrostatic anti-allergy | Deodorizing filter

Air, like water, is something we use everyday unconsciously. Yet, clean, fresh air is a vital part of creating a healthy space for humans. Achieving this healthy air is Plasma Quad, a plasma-based filter system that effectively removes four kinds of air pollutants; namely, bacteria, viruses, allergens and dust, which the air contains countless particles of.

Bacteria

Test results have confirmed that Plasma Quad neutralizes 99% of bacteria in 115 minutes in a 25m² test space.

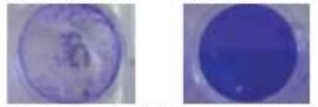
Plasma Quad off | Plasma Quad on

(Test No.) KRCES-Bio Test Report No.23_0311

Viruses

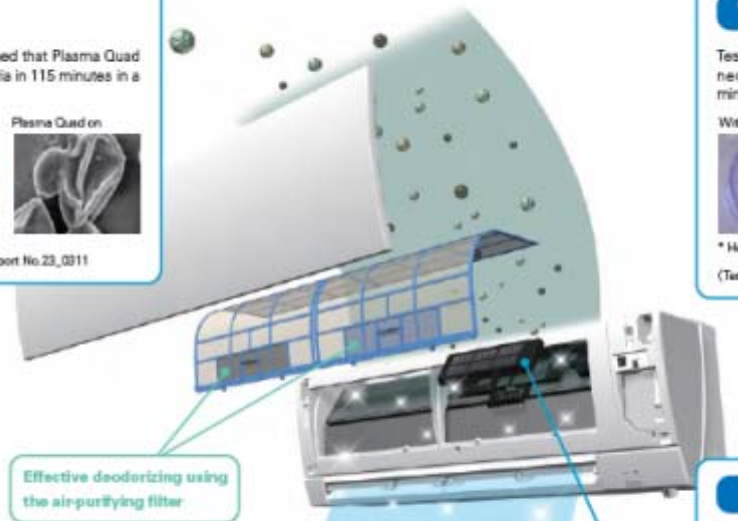
Test results have confirmed that Plasma Quad neutralizes 99% of virus particles in 65 minutes in a 25m² test space.

Without Plasma Quad | With Plasma Quad



* Hepatic cells turn transparent when affected by a virus.

(Test No.) [illegible], SMC No.23-002



Effective deodorizing using the air-purifying filter

Allergens

In a test, air containing cat fur and pollen was passed through the air cleaning device at the low airflow setting. Before and after measurements confirm that Plasma Quad neutralizes 94% of cat fur and 98% of pollen.

(Test No.) ITEA No.12M-RPTFEB022

Dust

In a test, air containing dust and ticks was passed through the air cleaning device at the low airflow setting. Before and after measurements confirm that Plasma Quad removes 98.6% of dust and ticks.

(Test No.) ITEA No.12M-RPTFEB022

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[Filter (Plasma quad)]

1. Can catch bacteria, virus, floating molds and floating allergens and make them inactivated.
2. Actual performance is tested in the 3rd party laboratory. (in 25m3 room)

Floating molds: 99% neutralized

Bacteria: 99% neutralized

Virus: 99% inactivated

Allergen: 94% neutralized

Good for air quality! No worry about health of your family!

→ Just going through the device!!

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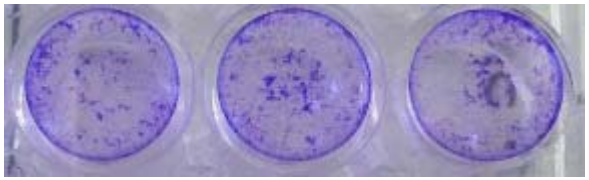
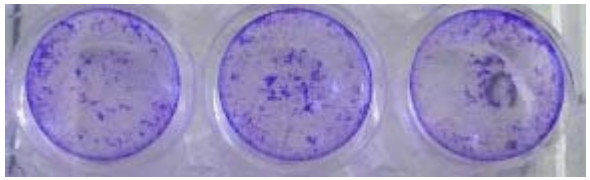
[The test result with Influenza virus]

Plasma Quad | Anti-Mold | Electrostatic anti-allergy | Deodorizing filter

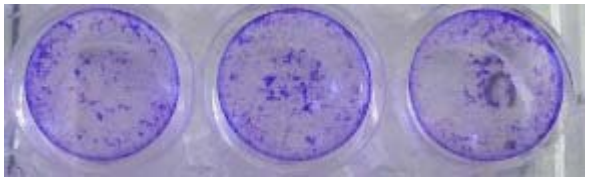
Virus sprayed at the beginning

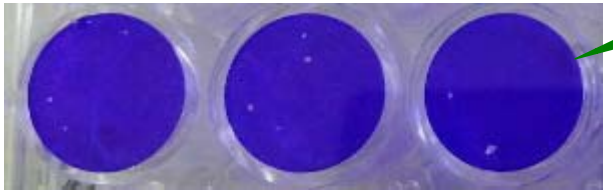
60 minutes later





Plasma device OFF





Air was cleaned!!

New Plasma device ON

Collected the air in the room and added the cell of a dog to make the virus parasitize it.

No color (transparence): Many virus exist and infect ability is high.

Blue colored: Virus is inactivated. Clean air.

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[Technical specification]

Indoor Unit				MSZ-FH25VE	MSZ-FH35VE
Outdoor Unit				MUZ-FH25VEHZ	MUZ-FH35VEHZ
Refrigerant				R410A	R410A
Power supply	**Outdoor(V/Phase/Hz)**			230V/SinglePhase/50Hz	230V/SinglePhase/50Hz
Cooling	Capacity	Rated	kW	2,5	3,5
		Min-Max	kW	0.8-3.5	0.8-4.0
	Total Input	Rated	kW	0,485	0,820
	EER			5,15	4,27
		EEL Rank		A	A
	SEER			9,1	8,9
		Energy efficiency class		A+++	A+++
Heating (Average Season)	Capacity	Rated	kW	3,2	4,0
		Min-Max	kW	1.0-6.3	1.0-6.6
	Total Input	Rated	kW	0,580	0,800
	COP			5,52	5,00
		EEL Rank		A	A
	Design load		kW	3.2(-10℃)	4.0(-10℃)
	Declared Capacity	at reference design temperature	kW	3.2(-10℃)	4.0(-10℃)
		at bivalent temperature	kW	3.2(-10℃)	4.0(-10℃)
		at operation limit temperature	kW	1.7(-25℃)	2.6(-25℃)
	SCOP			4,9	4,8
		Energy efficiency class		A++	A++
Breaker size			A	10	13
Indoor Unit	**Input**	Rated	kW	0,029	0,029
	Operating Current(Max)		A	0,4	0,4
	Dimensions	H*W*D	mm	305(+17)*925*234	305(+17)*925*234
	Weight		kg	13,5	13,5
	Air Volume	Cooling	m3/min	3.9/4.7/6.3/8.6/11.6(10.5)	3.9/4.7/6.3/8.6/11.6(10.5)
	(SLo-Lo-Mid-Hi-Shi(Dry/Wet))	Heating	m3/min	4.0/4.7/6.4/9.2/13.2	4.0/4.7/6.4/9.2/13.2
	Sound Level (SPL)	Cooling	dB(A)	20-23-29-36-42	21-24-29-36-42
	(SLo-Lo-Mid-Hi-SHi)	Heating	dB(A)	20-24-29-36-44	21-24-29-36-44
Outdoor Unit	**Dimensions**	H*W*D	mm	550*800*285	550*800*285
	Weight		kg	37	37
	Air Volume	Cooling	m3/min	31,3	33,6
		Heating	m3/min	31,3	33,6
	Sound Level (SPL)	Cooling	dB(A)	46	49
		Heating	dB(A)	49	50
Ext.Piping	**Diameter**	Liquid/Gas	mm	6.35/9.52	6.35/9.52
	Max.Length	Out-In	m	20	20
	Max.Height	Out-In	m	12	12
Guaranteed Operating Range(Outdoor)		Cooling	℃	-10 ~ +46	-10 ~ +46
		Heating	℃	-25 ~ +24	-25 ~ +24

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[Summary of funktions]

- ✓ Energyrank SCOP A++ SEER A+++
- ✓ COP 5.52
- ✓ SCOP 4,9
- ✓ Hyper heating
- ✓ +10oC function
- ✓ Weekly timer
- ✓ Fan Modes
- ✓ Plasma Quad
- ✓ Double vane
- ✓ Human sensor
- ✓ Guaranteed operating rannge down to -25oC out door temperature
- ✓ Quiet inddor unit 20dB(A)
- ✓ Power ful mode

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[Optional Parts]

Part number	Part name
MAC-2330FT-E	Electrostatic anti-allergy enzyme filter (for replacement)
MAC-3000FT-E	Deodorizing filter (for replacement)

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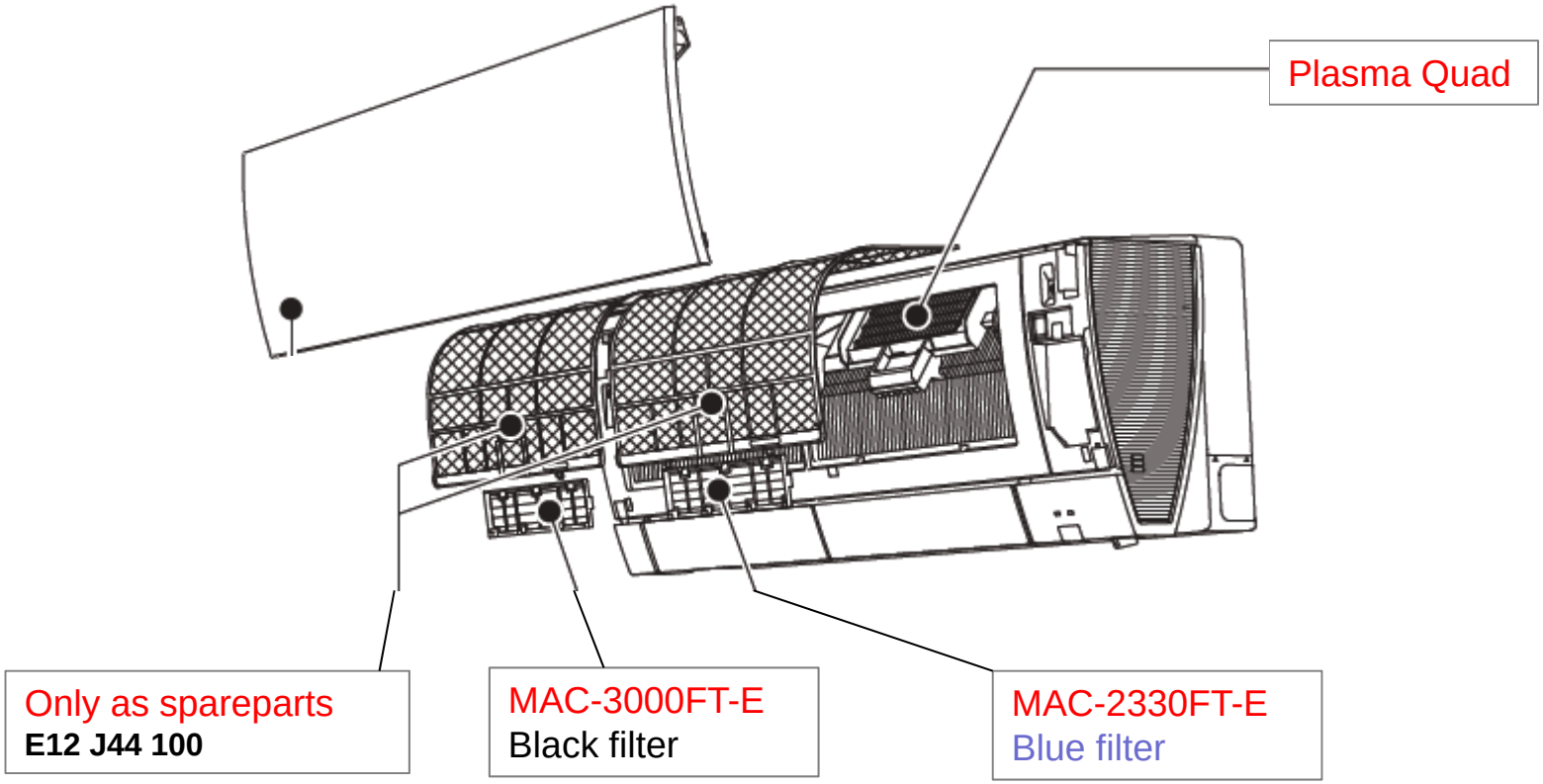
[The different filters]



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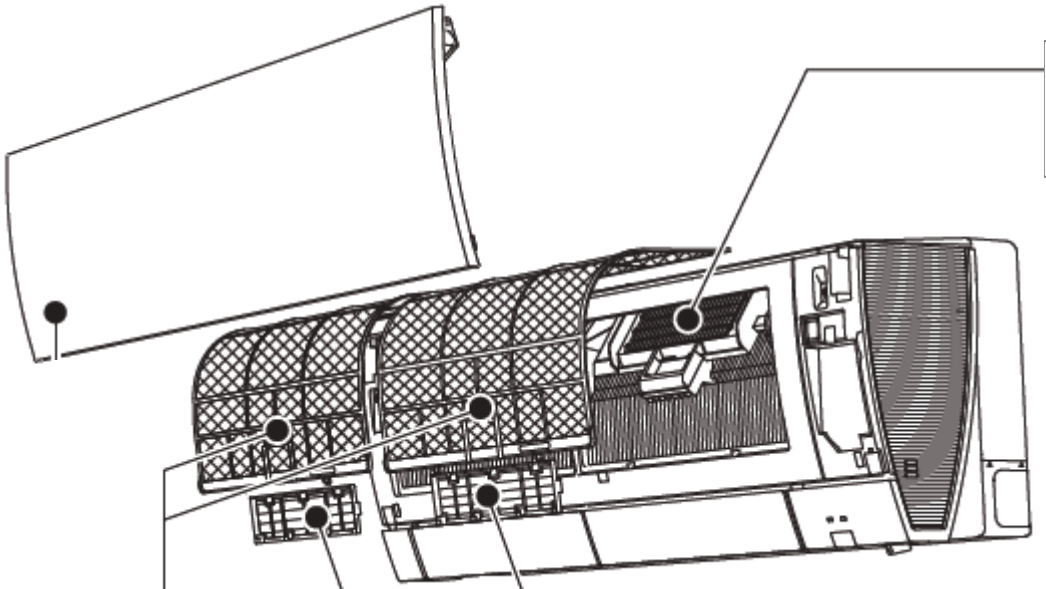
[Filter cleaning interval]

See the user manual for detailed



Plasma Quad
Cleaning every 3 months.

Clean every 2 week

Black filter
Cleaning every 3 months.
Every year, replace it with new for best performance.

Blue filter
Cleaning every 3 months.
Every year, replace it with new for best performance.

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[WiFi control]

Control unit with WiFi via your mobile (Mobile) or PC.
Can also be mounted afterwards.

Introduction winter 2013

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MITSUBISHI ELECTRIC
Changes for the Better

for a greener tomorrow eco Changes